Fig.1

FLOW

CONTROL

1

3

2

DATA

Fig.2

A

CONTROL

CONTROL FLOW
FOR EVENT PROCESS 1

| EVENT PROCESS 1 |
| EVENT PROCESS 2 |
| EVENT PROCESS 3 |
| EVENT PROCESS 4 |
| EVENT PROCESS 5 |

EVENT DATA
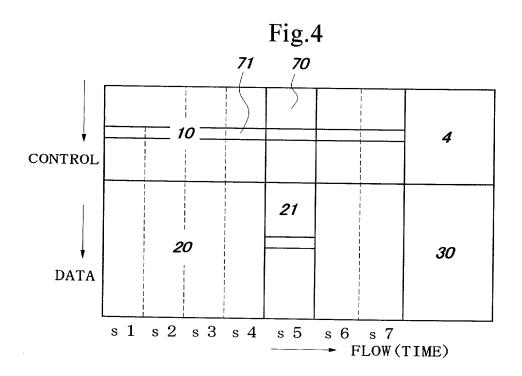
A

TIME (FLOW) ⟶

Fig.3

→ TIME(FLOW)

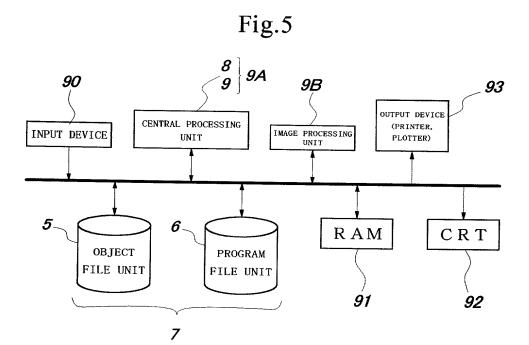| DATA FLOW OF EVENT PROCESS 1 |
| DATA FLOW OF EVENT PROCESS 2 |
| DATA FLOW OF EVENT PROCESS 3 |
| DATA FLOW OF EVENT PROCESS 4 |
| DATA FLOW OF EVENT PROCESS 5 |

DATA EVENT

Fig.4

CONTROL

DATA

s 1 s 2 s 3 s 4 s 5 s 6 s 7

→ FLOW(TIME)

Fig.5

INPUT DEVICE
90

CENTRAL PROCESSING
UNIT
8
9 } **9A**

IMAGE PROCESSING
UNIT
9B

OUTPUT DEVICE
(PRINTER,
PLOTTER)
93

5
OBJECT
FILE UNIT

6
PROGRAM
FILE UNIT

R A M
91

C R T
92

7

Fig.6

DERIVATIVE CLASS NAMES	BASIC CLASS NAMES			
ACCESS TYPE 1 TYPE 1 EXTERNAL VARIABLE 1	ACCESS TYPE A TYPE A MEMBER FUNCTION 1 (TYPE a ARGUMENT a)			
ACCESS TYPE 2 TYPE 2 EXTERNAL VARIABLE 2	ACCESS TYPE B TYPE B MEMBER FUNCTION 1 (TYPE b ARGUMENT b)			
ACCESS TYPE 3 TYPE 3 EXTERNAL VARIABLE 3	ACCESS TYPE C TYPE C MEMBER FUNCTION 1 (TYPE c ARGUMENT c)			
ACCESS TYPE 4 TYPE 4 EXTERNAL VARIABLE 4	ACCESS TYPE D TYPE D MEMBER FUNCTION 1 (TYPE d ARGUMENT d)			
• • •	• • • • •			
• • •	• • • • •			
• • •	• • • • •			

Fig.7

TYPE C MEMBER FUNCTION 3					
TYPE 1 EXTERNAL VARIABLE NAME 1					
TYPE 2 EXTERNAL VARIABLE NAME 2					
TYPE 3 EXTERNAL VARIABLE NAME 3					
TYPE 4 EXTERNAL VARIABLE NAME 4					
• •					
• •					
• •					
TYPE c ARGUMENT c					
• •					
• •					
• •					
TYPE t INTERNAL VARIABLE t					
• •					
• •					
• •					

Fig.8

FOR MULTI-DIMENSIONAL FLOW CHART

PROGRAMMER → OBJECT EDIT → OBJECT MD → DRAFT

OBJECT MD FILE → READ

SOURCE PROGRAM FILE → REVERSE EULERIAN CODER

OBJECT MD → SAVE → OBJECT MD FILE

DRAFT → FOUR-DIMENSIONAL FLOW CHART

DRAFT → THREE-DIMENSIONAL FLOW CHART

DRAFT → TWO-DIMENSIONAL FLOW CHART

HORIZONTALLY WRITTEN FLOW CHART

92

10

10

Fig.9

	TIME 1	TIME 2	TIME 3	TIME 4	TIME 5	TIME 6	TIME 7			
PC 1										
PC 2										
PC 3										
PC 4										
CONDITION 1										
CONDITION 2										
CONDITION 3										
CONDITION 4										
EVENT 1										
EVENT 2										
EVENT 3										
EVENT 4										
EVENT 5										
CPU 1										
CPU 2										
CPU 3										
CONTROL 1										
CONTROL 2										
CONTROL 3								CONTROL 3	CONTROL 2	CONTROL 1
DATA 1										
DATA 2										
DATA 3										
DATA 4										
DATA 5										

Fig.10

CPU FLAT SURFACE
CONTROL FLAT SURFACE
DATA FLAT SURFACE
TAB 1 / TAB 2

PC FLAT SURFACE
CONDITION FLAT SURFACE
EVENT FLAT SURFACE
TAB 1 / TAB 2

Fig.11

⟶ TIME

(TIME c)

|CPU c
CPU

(TIME c, CPU c)

|CONTROL c
CONTROL

(TIME c, CONTROL c)

|DATA c
DATA

(TIME c, DATA c)

Fig.12

	s 1	s 2	s 3	s 4	s 5	s 6	s 7	s 8
R1								
R2	AVERAGE			D	DATA	PRESENT		
R3					ABSENT		H	END
R4								
R5								

70

10

Fig.13

	s 1	s 2	s 3	s 4	s 5	s 6	s 7	s 8
D1				INPUT →	D			
D2		O→S				D+S→S		
D3		O→C				1+C→C		
D4								
D5								
D6								

20

Fig.14

R 4	R 3	R 2	R 1	
		D		D 1
		S		D 2
	H	C		D 3
				D 4
				D 5
				D 6

Fig.15

	EVENT 1	EVENT 2	EVENT 3	EVENT 4	EVENT 5
STATE 1					
STATE 2					
STATE 3					

Fig.16

⟶ TIME(FLOW)

DATA FLOW UNTIL STATE 1	DATA FLOW FOR EVENT PROCESS 1	DATA FLOW AFTER EVENT PROCESS ENDS
	DATA FLOW FOR EVENT PROCESS 2	
	DATA FLOW FOR EVENT PROCESS 3	
	DATA FLOW FOR EVENT PROCESS 4	
DATA EVENT	DATA FLOW FOR EVENT PROCESS 5	

Fig.17

⟶ TIME(FLOW)

	DATA FLOW FOR EVENT PROCESS 1	
	DATA FLOW FOR EVENT PROCESS 2	
DATA FLOW UNTIL STATE 1	DATA FLOW FOR EVENT PROCESS 3	DATA FLOW AFTER EVENT PROCESS ENDS
	DATA FLOW FOR EVENT PROCESS 4	
	DATA FLOW FOR EVENT PROCESS 5	

DATA EVENT

Fig.18

STATE 1	EVENT 1	EVENT 1 PROCESS
	CONTROL FLOW CHART	

STATE 2	EVENT 1	EVENT 1 PROCESS
	CONTROL FLOW CHART	

STATE 3	EVENT 1	EVENT 1 PROCESS
	CONTROL FLOW CHART	

Fig.19

→ TIME(FLOW)

DATA FLOW UNTIL STATE 1	DATA FLOW FOR EVENT PROCESS 3	DATA FLOW AFTER EVENT PROCESS ENDS
	DATA FLOW FOR EVENT PROCESS 4	
	DATA FLOW FOR EVENT PROCESS 5	

DATA EVENT

Fig.20

STATE 1	EVENT 3		CUT
	EVENT 3 PROCESS CONTROL FLOW CHART		

Fig.21

(A)

SHRINK ← ←————————————— CONTROL

DATA

EVENT PROCESS

TIME

(B)

CONTROL

DATA

————————————→ EXPAND

TIME

Fig.22

STATE 1	EVENT 3		
STATE 2	EVENT 1		
STATE 3	EVENT 1		

Fig.23

STATE 1	EVENT 3	
STATE 2		
STATE 3		
	EVENT 3 PROCESS CONTROL FLOW CHART	

Fig.24

	TIME 1	TIME 2	TIME 3	TIME 4	TIME 5	TIME 6	TIME 7	TIME 8	TIME 9	TIME 10
CONTROL 1										
CONTROL 2										
CONTROL 3					PROCESS FOR EVENT 3					
CONTROL 4										
CONTROL 5										
CONTROL 6					PROCESS FOR EVENT 1					
CONTROL 7										
CONTROL 8										
CONTROL 9					PROCESS FOR EVENT 1					
CONTROL 10										
CONTROL 11										
CONTROL 12										

Fig.25

	TIME 1	TIME 2	TIME 3	TIME 4	TIME 5	TIME 6	TIME 7	TIME 8	TIME 9	TIME 10
CONTROL 1										
CONTROL 2										
CONTROL 3					PROCESS FOR EVENT 3					
CONTROL 6					PROCESS FOR EVENT 1					
CONTROL 9					PROCESS FOR EVENT 1					
CONTROL 12										
CONTROL 13										
CONTROL 14										
CONTROL 15										
CONTROL 16										
CONTROL 17										
CONTROL 18										

Fig.26

TIME

CONTROL 1

CONTROL 2

CONTROL 3

CONTROL

CONTROL 4

DATA

Fig.27

TIME

CONTROL 1

DATA

CONTROL 2

DATA

CONTROL 3

DATA

CONTROL 4

DATA

CONTROL

Fig.28

			TIME 1	TIME 2	TIME 3	TIME 4	TIME 5	TIME 6	TIME 7	TIME 8
CPU 1										
	CONTROL 1									
		DATA 1								
		DATA 2								
	CONTROL 2									
		DATA 1								
		DATA 2								
	CONTROL 3									
		DATA 1								
		DATA 2								
CPU 2										
	CONTROL 1									
		DATA 1								
		DATA 2								
	CONTROL 2									
		DATA 1								
		DATA 2								
	CONTROL 3									
		DATA 1								
		DATA 2								

Fig.29

	TIME 1	TIME 2	TIME 3	TIME 4	TIME 5	TIME 6	TIME 7
CPU 1	CPU 1						
CPU 2							
CPU 3							
CPU 4							

Fig.30

	TIME 1	TIME 2	TIME 3	TIME 4	TIME 5	TIME 6	TIME 7
C P U 1							
C P U 2	CPU1		CPU2			CPU1	
C P U 3							
C P U 4							

Fig.31

```
         ┌──────────────┐
         │   AVERAGE    │
         └──────┬───────┘
                │
         ┌──────┴───────┐
         │   O → S      │
         │   O → C      │
         └──────┬───────┘
                │
  ┌─────────────┤
  │      ╱──────┴──────╲
  │     ╱      D        ╲
  │     ╲               ╱
  │      ╲──────┬──────╱
  │             │
  │        ◇────┴────◇
  │       ╱           ╲        ABSENT    ┌──────────────┐
  │      ◇   DATA      ◇───────────────→ │   S ∕ C → H  │
  │       ╲           ╱                  └──────┬───────┘
  │        ◇────┬────◇                          │
  │             │ PRESENT                 ╱──────┴──────╲
  │      ┌──────┴───────┐                ╱      H        ╲
  │      │  D + S → S   │                ╲               ╱
  │      │  1 + C → C   │                 ╲──────┬──────╱
  │      └──────┬───────┘                        │
  └─────────────┘                         ┌──────┴───────┐
                                          │     END      │
                                          └──────────────┘
```